

ABSTRACT

A bore hole tool assembly utilizes a multi-stage bearing system deployed between an inner mandrel and an outer tool housing wherein each bearing stage includes bearing element deployed between two deformable elements. The deformable elements are selected, based on the design and material characteristics of the housing, mandrel and bearings, such that tension and compressive loads are distributed proportionally across each bearing stage. A method for calculating loading and the selection of the deformable elements is also disclosed.